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The Fourteenth International Meeting on Time-Resolved Vibrational Spectroscopy (TRVS XIV)

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14. ABSTRACT

This grant supported the operation of the Fourteenth International Meeting on Time-Resolved Vibrational Spectroscopy (TRVS XIV), which was held May 9-14, 2009 in Meredith New Hampshire. The conference drew 116 participants and featured 60 oral presentations and 55 poster presentations. AFOSR supported the travel of 9 scientists selected for oral presentations at the conference, in addition to some operating expenses.

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Final Performance Report

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Air Force Office of Scientific Research
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Arlington, VA 22203-1768

by

Massachusetts Institute of Technology
Department of Chemistry
77 Massachusetts Avenue
Cambridge, MA 02139

for

THE FOURTEENTH INTERNATIONAL MEETING ON TIME-RESOLVED VIBRATIONAL SPECTROSCOPY (TRVS XIV)

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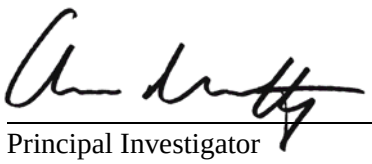
Grant Number: FA9550-09-1-0473



March 2, 2010

Principal Investigator (date)
Andrei Tokmakoff
Professor of Chemistry

Abstract: This grant supported the operation of the Fourteenth International Meeting on Time-Resolved Vibrational Spectroscopy (TRVS XIV), which was held May 9-14, 2009 in Meredith New Hampshire. The conference drew 116 participants and featured 60 oral presentations and 55 poster presentations. AFOSR supported the travel of 9 scientists selected for oral presentations at the conference, in addition to operating expenses.

The Fourteenth International Meeting on Time-Resolved Vibrational Spectroscopy (TRVS XIV) was held May 9-14, 2009 in Meredith, New Hampshire at the Inns and Spa at Mill Falls. This was the fourteenth in a series of biennial conferences covering the use of advanced vibrational spectroscopy for the use of studying time-dependent molecular processes in chemistry, physics and biology. This conference was widely considered by attendees to be one of the best conferences of the series, owing to a prominent list of invited speakers, a variety of exciting new research directions, international participation, and a significant participation by junior scientists. The conference drew 116 participants and featured 60 oral presentations (16 invited) and 55 poster presentations.

The topics of the conference included:

- Dynamics of liquids, solids, interfaces, and nanostructured materials
- TRVS in molecular biophysics and photobiology
- Chemical, vibrational, and hydrogen bonding dynamics
- Proton and electron transfer studies for energy conversion and storage
- Multidimensional vibrational spectroscopy: IR, Raman, and THz
- Single molecule vibrational spectroscopy
- Theoretical and computational spectroscopy

A full listing of the conference program and the conference attendees is attached. A book of abstracts featuring one page research synopses was distributed to conference participants. Full details of the conference program and organization are available on the conference web site: http://web.mit.edu/trvs/.

Funding for the conference operating costs was split roughly equally between government agencies (AFOSR, DOE), Boston area universities (MIT, Northeastern, Boston University), and company sponsors. Scientific organization was headed by Andrei Tokmakoff, with administrative assistance by Anne Hudson, Krupa Ramasesha, and Becky Nicodemus at MIT.

Most of the logistics for the conference were handled by MIT Conference Services. This AFOSR grant was used to support $3000 in operating costs and $4500 in travel grants to partially support the travel of young scientists giving oral presentations at the meeting. The travel support was distributed as follows:

Dave McCammant	Univ. of Rochester	$500
Munira Khalil	Univ. of Washington	$500
John Asbury	Penn State Univ.	$500
Aaron Massari	Univ. of Minnesota	$500
Kevin Kubarych	Univ. of Michigan	$500
Ken Eisenthal	Columbia Univ.	$500
Paul Champion	Northeastern Univ.	$500
Gilad Haran	Weizmann Institute	$500
Mariangela Di Donato	Univ. Amsterdam	$500

The organizing committee thanks the AFOSR for their generous support of this highly successful conference.

TRVS Final Attendees List

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TRVS*XIV* Program

ver: May 8,2009

Saturday, May 09, 2009

3:00 PM		*Registration*	
6:00 PM		*Reception*	**Sponsored by Infrared Systems Development and Infrared Associates**

Sunday, May 10, 2009

7:30 AM		*Breakfast*	
8:50 AM		*Opening Remarks*	Andrei Tokmakoff, *MIT*
9:00 AM		*Water and Hydrogen Bonding*	Presiding: Minhaeng Cho, *Korea University*
9:00 AM	In	**T. Elsaesser**, L. Szyc, M. Yang, J. R. Dwyer, E. T. J. Nibbering, *Max-Born Institute*	*Ultrafast vibrational dynamics of hydrated DNA*
9:40 AM	C	**H.J. Bakker**, C. Petersen, K.-J. Tielrooij, *AMOLF*	*Melting of hydrophobic icebergs*
10:00 AM	C	**Damien Laage**, Guillaume Stirnemann, James T. Hynes, *Ecole Normale Superieure*	*Why water reorientation slows down without iceberg formation around hydrophobic solutes*
10:20 AM	C	**Artem A. Bakulin**, Wayne Liang, Thomas la Cour Jansen, Douwe A. Wiersma, Huib J. Bakker, Maxim S. Pshenichniikov, *Univ. Groningen*	*Do hydrophobic groups stabilize the water structure?*
10:40 AM		*Break*	
11:10 AM		*Biochemical Dynamics*	Presiding: Minhaeng Cho, *Korea University*
11:10 AM	In	**Richard A. Mathies**, Renee R. Frontiera, Chong Fang, Jyotishman Dasgupta, Mark Creelman, Sangdeok Shim, *UC Berkeley*	*Femtosecond Stimulated Raman Spectroscopy of Chemical and Biochemical Reaction Dynamics*
11:50 AM	C	**W. Zinth**, W. J. Schreier, J. Kubon, N. Regner, K. Haiser, T. E. Schrader, P. Clivio, P. Gilch, *University of Munich*	*Ultrafast IR-spectroscopy: CPD-photodamage in DNA is formed from the excited singlet state*
12:10 PM	C	Allison Stelling, Minako Kondo, Allison Haigney, Ian Clark, Adeibert Bacher, Peter J. Tonge, **Stephen R. Meech**, *University of East Anglia*	*Early Events in the Blue-Light Sensing BLUF Domain Protein Viewed Through Time Resolved IR*
12:30 PM		*Lunch*	
2:00 PM		*Chemical Dynamics*	Presiding: Kevin Kubarych, *Univ. of Michigan*
2:00 PM	C	S. Takeuchi, S. Ruhman, T. Tsuneda, M. Chiba, T. Taketsugu, **T. Tahara**, *RIKEN*	*Observing continuous structural change of reacting molecules: ISRS and computational study on the reaction coordinate of photoisomerization of cis-stilbene*
2:20 PM	C	Jaane Seehusen, Jorg Lindner, Dirk Schwarzer, and **Peter Vohringer**, *University of Bonn*	*Ultrafast vibrational dynamics of artificial hydrogen-bond networks*
2:40 PM	C	M. Panman, P. Bodis, B.H. Bakker, A.M. Brouwer, W.J. Buma, E.R. Kay, D.A. Leigh, **S. Woutersen**, *University of Amsterdam*	*Real-time observation of shuttling molecular devices*
3:00 PM	C	**Karin Haiser**, Thorben Cordes, Teja Herzog, Gehad Zeyat, Karola Ruck-Braun, and Wolfgang Zinth, *Lehrstuhl fur BioMolekulare Optik*	*The Photochemistry of Chromenes Studied with Time-Resolved Infrared Spectroscopy*
3:20 PM		*Break*	**Sponsored by Tokyo Instruments**
3:50 PM		*Multidimensional Spectroscopy*	Presiding: Kevin Kubarych, *Univ. of Michigan*
3:50 PM	In	**Shaul Mukamel**, Oleksiy Roslyak, Cyril Falvo, and Benoit Palmieri	*Time Resolved Stimulated Vibrational Spectroscopy with pulse shaping and entagled photons*
4:30 PM	C	**Igor V. Rubtsov**, Valeriy M. Kasyanenko, Grigory I. Rubtsov, Christopher Keating, Zhiwei Lin, *Tulane University*	*Correlating Energy Transport Time with Distance using Relaxation-Assisted 2DIR*
4:50 PM	C	Patrick F. Tekavec, Jeffrey A. Myers, Kristin L. M. Lewis, Franklin Fuller, **Jennifer P. Ogilvie**, *University of Michigan-Ann Arbor*	*Two-dimensional electronic spectroscopy with a continuum probe*
6:00 PM		*Dinner*	
7:30 PM		*Poster Session 1*	

Monday, May 11, 2009

7:30 AM		*Breakfast*	
9:00 AM		*Imaging and Single Molecules*	Presiding: Andrei Tokmakoff, *MIT*
9:00 AM	In	**X. Sunney Xie**, Christian W. Freudiger, Wei Min, Brain G. Saar, *Harvard University*	*Label-Free Biomedical Imaging with High Sensitivity by Stimulated Raman Scattering Microscopy*
9:40 AM	In	J. A. Dieringer, K. L. Wustholz, J. P. Camden, S. L. Kleinman, D. J. Masiello, Y. Wang, R. B. Lettan, K. Scheidt, L. Marks, G. C. Schatz, **R. P. Van Duyne**, *Northwestern University*	*Advances in Single-Molecule Surface-Enhanced Raman Spectroscopy*
10:20 AM		*Break*	**Sponsored by Renishaw**
10:50 AM		*Emerging Methods*	Presiding: John Asbury, *Pennsylvania State University*
10:50 AM	In	Hanju Rhee and **Minhaeng Cho**, *Korea University*	*Ultrafast characterization of vibrational optical activity*
11:30 AM	C	**Jan Helbing** and Matthias Bonmarin, *Universitat Zurich*	*Transient Vibrational Circular Dichroism Spectroscopy*
11:50 AM	C	Kristina Wilson, Brendon Lyons, **David McCamant**, *University of Rochester*	*Two-dimensional stimulated Raman spectroscopy: New developments in theory and experiments that probe intra- and inter-molecular anharmonicity*
12:10 PM	C	**T. Buckup**, J. Mohring, M. Motzkus, *Philipps University Marburg*	*Pump-DFWM as multidimensional method to investigate molecular vibrations in the excited state of biological molecules*
12:30 PM		*Lunch*	
2:00 PM		*Ultrafast Dynamics*	Presiding: Munira Khalil, *University of Washington*
2:00 PM	In	Oshrat Bismuth, Amir Wand, Noga Friedman, Mordechai Sheves, **Stanford Ruhman**, *Hebrew University*	*Investigating the excited state of the retinal protein chromophore with transient impulsive Raman*
2:40 PM	In	D. Vorobyev, D. Kuroda, F. Kuo, **R. M. Hochstrasser**, *University of Pennsylvania*	*Ultrafast IR studies of aqueous ions*
3:20 PM		*Break*	**Sponsored by ThermoElectron**
3:50 PM		*Charge Transfer*	Presiding: Munira Khalil, *University of Washington*
3:50 PM	C	Katrin Adamczyk, Mirabelle Premont-Schwarz, Jens Dreyer, Dina Pines, Ehud Pines, **Erik T.J. Nibbering**, *Max Born Institut*	*Ultrafast aqueous protonation dynamics of cyanate and bicarbonate*
4:10 PM	C	Ryan D. Pensack, Kyle M. Banyas, **John B. Asbury**, *Pennsylvania State University*	*2D IR Spectroscopic Study of Charge Traps in Organic Photovoltaic Polymer Blends*
4:30 PM	C	Chantelle Anfuso-Cleary, **Tianquan Lian**, *Emory University*	*Vibrational Sum-Frequency Generation Study of Interfacial Charge Transfer Complexes of Single Crystal TiO2 Surfaces*
4:50 PM	C	**Sean T. Roberts**, Poul B. Petersen, Krupa Ramasesha, and Andrei Tokmakoff, *MIT*	*Transport of the Aqueous Hydroxide Ion Probed Through Ultrafast Two-Dimensional Infrared Spectroscopy*
6:00 PM		*Dinner*	
7:30 PM		*2D IR spectroscopy*	Presiding: Thomas Elsaesser, *Max Born Institute*
7:30 PM	In	**M. D. Fayer**, J. Zheng, H. Ishikawa, D. E. Moilanen, K. Kwak, D. E. Rosenfield, *Stanford University*	*Investigations of Chemical Dynamics with Ultrafast 2D IR Vibrational Echo Chemical Exchanage Spectroscopy*
8:10 PM	In	**Martin Zanni**, *University of Wisconsin-Madison*	*Residue-by-residue structural and time resolution with pulse shaping 2D IR spectroscopy and isotope labeled peptides*

Tuesday, May 12, 2009

7:30 AM		*Breakfast*	
9:00 AM		*Imaging and Single Molecules*	Presiding: Jennifer Ogilvie, *University of Michigan*
9:00 AM	In	**Hiro-o Hamaguchi**, *University of Tokyo*	*Toward single molecule and single cell time-resolved vibrational spectroscopy*
9:40 AM	In	**Gilad Haran**, *Weizmann Institute of Science*	*Single-Molecule Raman Scattering: from Plasmonics to Charge Transfer*
10:20 AM	C	**H. Peter Lu**, Yuanmin Wang, *Bowling Green State University*	*AFM-Raman Imaging Analysis of Single-Molecule Interfacial Electron Transfer Dynamics*

10:40 AM		*Break*	
11:10 AM		*Spectroscopy at Interfaces*	Presiding: Jennifer Ogilvie, *University of Michigan*
11:10 AM	In	Jeffrey A. Carter, Zhaohui Wang, Alexei Lagutchev, **Dana D. Dlott**, *University of Illinois-Urbana Champaign*	*Dynamics at interfaces probed by time-resolved sum-frequency generation spectroscopy*
11:50 AM	C	Yi Rao, Nicholas J. Turro, **Kenneth B Eisenthal**, *Columbia University*	*Time Resolved Vibrational Sum Frequency Generation (SFG) at Liquid Surfaces*
12:10 PM	C	Juraj Bdzoch, Jan Zacharias, Martin Wolf, **Christian Frischkorn**, *Freie Universitat Berlin*	*Vibrational response of D2O molecules in thin layers absorbed on Ru(001) after femtosecond UV excitation*
12:30 PM		*Lunch*	
2:00 PM		*Proteins*	Presiding: Stephen Meech, *University of East Anglia*
2:00 PM	C	**Paul M. Champion**, *Northeastern University*	*Recent Studies of Coherent Vibrational Motion in Biomolecules*
2:20 PM	C	**Carsten Kötting**, Klaus Gerwert, *Ruhr-Universitat Bochum*	*Proteins in Action: Monitored by tr(time-resolved) FTIR spectroscopy*
2:40 PM	C	**Ziad Ganim**, Kevin Jones, Andrei Tokmakoff, *MIT*	*2D IR Spectroscopy of Insulin Dimer Dissociation and Unfolding Dynamics*
3:00 PM		*Break*	
3:30 PM		*Multidimensional Spectroscopy*	Presiding: Stephen Meech, *University of East Anglia*
3:30 PM	C	**Charles B. Harris**, James F. Cahoon, Karma R. Sawyer, Jacob P. Schlegel, Matthew C. Zoerb, *University of California-Berkeley*	*Using two dimensional vibrational spectroscopy to determine transition state geometries in liquids*
3:50 PM	C	Michael Lynch, Mark Cheng, Benjamin Van Kuiken, **Munira Khalil**, *University of Washington-Seattle*	*Understanding vibrational interactions on the ground and electronic excited states of transition metal complexes using multidimensional visible-infrared spectroscopies*
4:10 PM	C	Carlos R. Baiz, Matthew J. Nee, Robert McCanne, **Kevin J. Kubarych**, *University of Michigan*	*Temperature-dependent vibrational relaxation measured by non-equilibrium 2DIR spectroscopy*
4:30 PM	C	A.I. Stewart, R. Kania, G.M. Greetham, I.P. Clark, M. Towrie, A.W. Parker, **N.T. Hunt**, *University of Strathclyde*	*Vibrational Dynamics of a Free Radical Intermediate via Transient 2D-IR Spectroscopy of a Photolysis Reaction*
6:00 PM		*Dinner*	
7:30 PM		*Poster Session 2*	

Wednesday, May 13, 2009

7:30 AM		*Breakfast*	
9:00 AM		*Water and Peptides*	Presiding: Huib Bakker, *AMOLF*
9:00 AM	In	**Jim Skinner**, *University of Wisconsin-Madison*	*Water and peptide structure and dynamics as probed by vibrational spectroscopy*
9:40 AM	C	V.V. Volkov, **R. Righini**, *University of Florence*	*Structural properties and dynamics of membrane associated anchor peptide*
10:00 AM	C	**Ellen Backus**, Robbert Bloem, Peter Hamm, *FOM Institute for Atomic and Molecular Physics*	*Glass transition regulated heat transport through a helical peptide*
10:20 AM	C	**Thomas la Cour Jansen**, Chungwen Liang, Jasper Knoester, *University of Groningen*	*Isotope label 2DIR spectroscopy in proteins*
10:40 AM		*Break*	
11:10 AM		*Solid State and Terahertz*	Presiding: Huib Bakker, *AMOLF*
11:10 AM	C	Matthias C. Hoffmann, Janos Hebling, Harold Y. Hwang, Ka-Lo Yeh, **Keith A. Nelson**, *MIT*	*THz-pump/THz-probe nonlinear spectroscopy*
11:30 AM	C	**Tomonori Nomoto** and Hiroshi Onishi, *Kobe University*	*Near-surface low-frequency vibrations of TiO2 observed by fourth-order coherent Raman spectroscopy*
11:50 AM	C	J. Mance, F.X. Morrissey, **S.L. Dexheimer**, *Washington State University*	*Acoustic and optical phonon dynamics in excition self-trapping*
12:10 PM	C	**C. Konek**, J. Wilkinson, J. Hooper, O. Esenturk, E. Heilweil, *Indian Head, Naval Surface Warfare Center*	*Terahertz Spectroscopy of Explosives*
12:30 PM		*Lunch*	

2:00 PM		*Vibrational Dynamics in Liquids*	Presiding: Edwin Heilweil, *NIST*
2:00 PM	C	**Takayoshi Kobayashi**, Izumi Iwakura, and Atsushi Yabushita, *University of Electro-Communications*	*Direct observation of molecular structural change during oxidation in the ground state triggered by stimulated Raman by a 5fs laser*
2:20 PM	C	**A. Paarmann**, M. Lima, R. Chelli, V. V. Volkov, R. Righini, R. J. D. Miller, *University of Toronto*	*Vibrational Excitons in Liquid Formamide*
2:40 PM	C	David A. Turton and **Klaas Wynne**, *University of Strathclyde*	*Ultrafast cage rattling and TA "phonon" modes in atomic and molecular liquids: implications for glass formation*
5:30 PM		*Excursion and Banquet*	

Thursday, May 14, 2009

7:30 AM		*Breakfast*	
9:00 AM		*Peptides and Proteins*	Presiding: Tahei Tahara, *RIKEN*
9:00 AM	C	**Esben Ravn Andresen** and Peter Hamm, *Universitat Zurich*	*Site-specific difference 2D-IR spectroscopy of bacteriorhodopsin*
9:20 AM	C	**Mariangela Di Donato**, L.J.G.W. van Wilderen, Klaas Hellingwerf, Ivo H.M. Van Stokkum, Rienk van Grondelle, Marie Louise Groot, *Vrije Universiteit Amsterdam*	*The proton transfer pathway in Green Fluorescent Proteins studied with femtosecond time resolved Vis/midIR pump-probe spectroscopy and multi-pulse visible spectroscopy*
9:40 AM	C	C. Krejtschi, O. Ridderbusch, R. Huang, L. Wu, T.A. Keiderling, **K. Hauser**, *University of Frankfurt*	*Site-specific folding dynamics of peptides studied by temperature-jump infrared-spectroscopy*
10:00 AM	C	**Hajime Torii**, *Shizuoka University*	*Toward Efficient Time-Domain Calculations of 2D-IR Spectra*
10:20 AM	C	**van Thor JJ**, Ronayne KL, Towrie M, Sage JT, *Imperial College London*	*Balance between ultrafast parallel reactions in the green fluorescent protein has a structural origin*
10:40 AM		*Break*	
11:10 AM		*Water at Interfaces*	Presiding: Tahei Tahara, *RIKEN*
11:10 AM	In	**Mischa Bonn**, *FOM-Institute for Atomic and Molecular Physics*	*Stucture and dynamics of interfacial water*
11:50 AM	C	I.V. Stiopkin, C. Weeraman, F. Shalhout, **A.V. Benderskii**, *Wayne State University*	*Vibrational Line Shapes and Ultrafast Orientational Dynamics at the Air/Water Interface*
12:10 PM	C	Ali Eftekhari-Bafrooei and **Eric Borguet**, *Temple University*	*The effect of ordering on the vibrational dynamics of interfacial water*
12:30 PM		*Lunch*	

TRVS*XIV* Poster Sessions

ver: May 8,2009

	Authors	Title
Sunday, May 10, 2009		
1	**Sean Garrett-Roe** and Peter Hamm, *University of Zurich*	*3D-IR of isotopically substituted water (HOD/H_2O) and CO_2 in water*
2	**Krupa Ramasesha**, Sean T. Roberts, Andrei Tokmakoff, *MIT*	*Anisotropy of Water studied using Molecular Dynamics Simulations*
3	**Guilluame Stirnemann**, Peter J. Rossky, James T. Hynes, Damien Laage, *Ecole Normale Superieure*	*Water Reorientation and Hydrogen-Bond Dynamics next to an Extended Hydropobic Surface*
4	**Y.-S. Lin** and J. L. Skinner, *University of Wisconsin-Madison*	*Ultrafast Infrared Spectroscopy of Dilute HOD in Aqueous Salt solutions*
5	**Junichi Ono**, Yoshitaka Tanimura, Shinji Saito, *Kyoto University*	*A Theoretical Study of Intermolecular Vibrational Mode Coupling in Aqueous Solutions*
6	Daniel Shaw, **Matthijs Panman**, Sander Woutersen, *University of Amsterdam*	*Cooperative vibrational relaxation in hydrogen-bonded liquids*
7	**Lukasz Piatkowski**, Huib Bakker, *AMOLF*	*Ultrafast intermolecular energy transfer in heavy water*
8	Thomas la Cour Jansen, Dan Cringus, **Maxim S. Pshenichnikov**, *University of Groningen*	*Dynamics of Water Symmetric-Asymmetric Stretches*
9	**Rebecca A. Nicodemus** and Andrei Tokmakoff, *MIT*	*Temperature Dependent 2D IR and Pump Probe Measurements of HOD in H_2O*
10	**Scott M. Gruenbaum**, Roger F. Loring, *Cornell University*	*Interference and Quantization in Semiclassical Response Functions*
11	**Sean T. Roberts**, Poul B. Petersen, Krupa Ramasesha, and Andrei Tokmakoff, *MIT*	*Transport of the Aqueous Hydroxide Ion Probed Through Ultrafast Two-Dimensional Infrared Spectroscopy*
12	**Poul B. Petersen**, Sean T. Roberts, Krupa Ramasesha, Daniel G. Nocera and Andrei Tokmakoff, *MIT*	*Vibrational Dynamics of Proton Transfer Systems*
13	**R.L.A. Timmer**, M.J. Cox, H.J. Bakker, *AMOLF*	*Proton transfer in ice*
14	V. Kozich, J. Dreyer, **W. Werncke**, *Max Born Institut*	*Mode-selective vibrational redistribution after spectrally selective N-H stretching mode excitation in intermolecular hydrogen bonds*
15	**Feng Ding**, Qin Zhong, Michael R. Brindza, Robert A. Walker, John T. Fourkas, *University of Maryland at College Park*	*Surface studies of liquids using counter-propagating vibrational sum frequency spectroscopy*
16	**Patrick L. Hayes**, Ehow H. Chen, Jennifer L. Achtyl, Franz M. Geiger, *Northwestern University*	*Tracking Charge Densities and Conformations of a Cationic Surfactant at Silica/Aqueous Interfaces with Vibrational Sum Frequency Generation*
17	Jorg Lindner, Tim Schafer, Dirk Schwarzer, **Peter Vohringer**, *University of Bonn*	*Vibrational energy relaxation in liquid-to-supercritical ammonia*
18	**David Turton**, Klaas Wynne, *University of Strathclyde*	*Observation of mesoscopic structure in ionic liquids by ultrafast OKE and dielectric spectroscopies*
19	**I.A. Heisler** and S.R. Meech, *University of East Anglia*	*Ultrafast Liquid Dynamics Under Strain*
20	**Daniel Shaw** and Sander Woutersen, *University of Amsterdam*	*Non-dipolar resonant intermolecular energy transfer in hydrogen bonded liquids*
21	**K. Mazur**, I. A. Heisler, S. R. Meech, *University of East Anglia*	*Unraveling the Raman Spectral Density of Complex Fluids with Diffractive Optics OKE Measurements*
22	**Rintaro Shimada**, Hiro-o Hamaguchi, *University of Tokyo*	*Selective detection of proximate solvent molecules by the molecular near-field effect in resonance hyper-Raman scattering*
23	**S.D. McGrane**, R.J. Scharff, M. Greenfield, and D.S. Moore, *Los Alamos National Laboratory*	*Pulse shaping of filamentation broadened pulses for optimizing coherent Raman spectroscopy*
24	Meng Cui, Brandon R. Bachler, Sarah R. Nichols and **Jennifer P. Ogilvie**, *University of Michigan-Ann Arbor*	*A Comparison Between Coherent and Spontaneous Raman Scattering Under Biological Imaging Conditions*

25	**M. Liu**, B. Pardo, M.M. Qazilbash, S.J. Yun, B.G. Chae, B.J. Kim, D.N. Basov, R.D. Averitt, *Boston University*	*Conductivity Dynamics in the Correlated Metallic State of V_2O_3*
26	**Artem A. Bakulin**, Dmitry Yu. Paraschuk, Paul H.M. van Loosdrecht, and Maxim S. Pshenichnikov, *University of Groningen*	*Ground-state charge-transfer complexes of conjugated polymer as an intermediate for charge photogeneration*
27	**Aaron M. Massari**, Audrey A. Eigner, *University of Minnesota*	*1D and 2D-IR spectroscopy of blended polymer-porphyrin thin films*
28	**T. Buckup**, J. Mohring, M. Motzkus, *Philipps University Marburg*	*Manipulating vibrational wavepackets with direct UV shaping*

Tuesday, May 12, 2009

1	**Jessica M. Anna**, Kevin J. Kubarych, *University of Michigan-Ann Arbor*	*Equilibrium dynamics of dicobalt octacarbonyl: the effects of isomerization on coherences*
2	**Robert McCanne,** Carlos Baiz, Matthew J. Nee, Jessica Anna, Kevin J. Kubarych, *University of Michigan-Ann Arbor*	*Using Transient Fourier Transform Two-Dimensional Infrared Spectroscopy to Monitor Non-Equilibrium Reactions and Dynamics*
3	**Carlos R. Baiz**, Kevin J. Kubarych, *University of Michigan-Ann Arbor*	*Intermolecular vibrational energy transfer studies with non-equilibrium infrared photon echo spectroscopy*
4	**Nadja Regner**, Thorben Cordes, Karin Haiser, Karola Ruck-Braun, Wolfgang Zinth, *LMU Munchen*	*Dynamics of Photoswitchable Hemithioindigo-Peptides*
5	**Koichi Iwata**, Nobuyuki Asami, Tomohisa Takaya, James Calladine, Xue-Zhong Sun, Michael W. George, Antony W. Parker, Soshi Yabumoto, Shinsuke Shigeto, Hiro-o Hamaguchi, *University of Tokyo*	*Mechanism of ultrafast charge transfer reaction in 9,9'-bianthryl examined with time-resolved mid-infrared and near-infrared spectroscopy*
6	Katrin Adamczyk, Natalie Banerji, **Bernhard Lang**, Omar F. Mohammend, Erik T. J. Nibbering, Eric Vauthey, *University of Geneva*	*Tight and loose ion pairs as primary reaction products of highly exergonic photo-induced bimolecular electron transfer*
7	**Sergey V. Shilov**, Thomas J. Tague, *Bruker Optics*	*Time-resolved step-scan FTIR spectroscopy with a new research vacuum spectrometer*
8	**Kevin C. Jones**, Ziad Ganim, Andrei Tokmakoff, *MIT*	*Heterodyned Detection for Linear and Nonlinear Infrared Signal Characterization*
9	**Michael Lynch**, Mark Cheng, Benjamin Van Kuiken, and Munira Khalil, *University of Washington*	*Understanding vibrational interactions on the ground and electronic excited states of transition metal complexes using multidimensional visible-infrared spectroscopies*
10	**Zhiwei Lin**, Valeriy M. Kasyanenko, Grigory I. Rubtsov, Igor V. Rubtsov, *Tulane University*	*Interferometric delay measurements implemented for dual-frequency 2DIR setup*
11	**Hideaki Kano** and Hiro-o Hamaguchi, *University of Tokyo*	*Time-resolved CARS imaging of cell division using a supercontinuum light source*
12	**Jan. Helbing**, Harald. Bregy, Peter Hamm, *Universitat Zurich*	*Parameters governing the transient 2D-IR spectra of peptides - the opening of a beta turn thioxopeptide*
13	**Joshua Lessing**, Jongjin Kim, Kevin Jones, Ziad Ganim, and Andrei Tokmakoff, *MIT*	*Two dimensional vibrational spectroscopy study of hydrophobic collapse in bovine neck elastin and elastin like proteins*
14	**Ann Marie Woys**, Martin T. Zanni, *University of Wisconsin-Madison*	*2D IR Spectroscopy of native probes provide clues to the structure of peptides in a lipid bilayer*
15	**L.D. Ziegler**, L. R. Chieffo, J. T. Shattuck, E. Pinnick, F. Wang, S. Erramilli, *Boston University*	*Nitrous oxide vibrational relaxation: A probe of interfacial water in phospholipid bilayers*
16	Eeva-Liisa Karjalainen, **Andreas Barth**, *Stockholm University*	*Analysis of protein backbone structural changes by experiment and calculation*
17	**Kyril M. Solntsev**, Laren M. Tolbert, *Georgia Institute of Technology*	*Excited-state proton transfer in novel photoacids: Introducing a challenge for the TRVS studies*
18	**Karsten Neumann**, Mirka-Kristin Verhoefen, Gabreila Schafer, Georg Wille, Werner Mantele, Josef Wachtveitl, *Johann Wolfgang Goethe University Frankfurt/Main*	*Nitrophenylacetate anion as caged compound for CO_2: direct observation of the photodecarboxylation*

19	**Andreas D. Stahl,** Mariangela Didonato, Ivo van Stokkum, Marie Louise Groot, *VU University Amsterdam*	*Excitation Energy Transfer in PS1 and LHC2 measured in the midIR: Spectroscopy & Structural Relations*
20	**M. Yoshizawa**, D. Kosumi, R. Nakamura, Y. Iwabuchi, M. Fujiwara, and H. Hashimoto, *Tohuku University*	*Vibrational dynamics of the dark excited state (S1) in beta-Carotene investigated by two-photon excitation spectroscopy*
21	Sergei G. Kruglik, Jean-Louis Martin, **Michel Negrerie**, *Ecole Polytechnique*	*Measurement of domed-to-planer heme motion induced by NO binding to myoglobin*
22	**J.C. Owrutsky**, D.J. Brown, G.M. Sando, *Naval Research Laboratory*	*Vibrational dynamics of molecular and networked metal cyanides*
23	**Christopher Keating**, Sriram G. Naraharisetty, Beth A. McClure, Jeff Rack, Igor V. Rubtsov, *Tulane University*	*The Use of Sulfoxides as Structural Reporters in Dual-Frequency 2DIR Spectroscopy*
24	M. Candelaresi, M. Pagliai, M. Lima, P. Foggi, **R. Righini**, *University of Florence*	*Solvation dynamics of methyl acetate probed by two-dimensional IR spectroscopy*
25	G. Seifert, **S. Arnold**, H. Graener, *Martin-Luther-Universitat Halle-Wittenberg*	Vibrational energy relaxation of halogenated methane derivatives of the type CHX_3 and CH_2X_2 (X=Cl, Br, J)
26	**Valeriy M. Kasyanenko**, Zhiwei Lin, Grigory I. Rubtsov, James P. Donahue, Igor V. Rubtsov, *Tulane University*	*Energy Transport Between Ligands in Transition Metal Complexes*